Exceptional Item Request: Elementary Engineering Education Academy

Requested Amount: $5 million

Description: Develop an innovative, online training platform to train and mentor 5,000 Texas elementary teachers and 500 school leaders on how to integrate engineering processes (design, modeling and algorithmic thinking) into elementary classrooms.

Background: Most K-12 students don’t know what engineering is and generally have very little exposure to it – yet they seem to be quite sure they do not like it. By the time students reach the fourth grade, a third of them have lost interest or deemed STEM irrelevant to their future plans (NSB, 2010). House Bill 5, which passed during the 83rd legislative session, created a STEM endorsement for high school diplomas. In order to encourage students’ participation in STEM, students need to be prepared earlier with programs starting in pre-K to elementary. Research has proven that high-quality pre-K-5th education increases high school attendance by a third, increases employment by 23 percent and produces up to 13 percent return on investment for every public dollar spent (NIH, 2011; Temple & Reynolds, 2007).

Benefits to the State of Texas

- High-quality early STEM education for children in elementary school
- Capacity building by providing sustainable professional development for elementary students
- Increase of STEM interest and engineering proficiency for children in elementary school
- Increase of awareness and support of school community and industry for the need of high-quality early engineering education and its role in STEM preparation for long-term workforce development

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